

AND WHAT ELSE BESIDE CARDIAL POTTERY? SEARCHING FOR MEDITERRANEAN INFLUENCES IN EARLY NEOLITHIC SETTLEMENT OF VALADA DO MATO (ÉVORA, PORTUGAL)

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Abstract: Valada do Mato is an Early Neolithic settlement located in Southern Portugal, around 100km and 450km, respectively from the nearest Atlantic and Mediterranean coasts. In spite of their Atlantic geographical position, Valada do Mato just like other Southern Portugal Early Neolithic sites strongly participates in a Neolithic Mediterranean identity sharing technological, economic and symbolic items with other western agro-pastoralist groups settled in both sides of Mediterranean basin.

Being so, this paper pretends to look for both material and immaterial Mediterranean traits in Valada do Mato archaeological record, moving beyond the ubiquitous cardial pottery, searching for a more complex economy of relations within western Mediterranean cultural geography.

Keywords: Early Neolithic; Western Mediterranean Networks; Site-Catchment Analysis; Raw Materials Sources; Pottery Styles.

Resumo: Valada do Mato é um povoado do Neolítico antigo localizado no Sul de Portugal, a cerca de 100km e 450km, respectivamente da costa Atlântica e Mediterrânea mais próximas. Apesar da sua posição Atlântica, o povoado da Valada do Mato, como acontece com outros sítios do Neolítico antigo, no Sul de Portugal, integra-se culturalmente no Neolítico Mediterrâneo, partilhando elementos tecnológicos, económicos e simbólicos com outras comunidades agro-pastoris implantadas nas duas margens do Mediterrâneo.

É por isso, objectivo deste texto, identificar componentes materiais e imateriais de origem Mediterrânea que integrem o registo arqueológico da Valada do Mato, partindo para além da omnipresente cerâmica cardial, em busca de uma economia de relações culturais alargada, no quadro do Mediterrâneo ocidental.

Palavras-Chave: Neolítico antigo; redes de contacto no Mediterrâneo ocidental; modelo de site-catchment; origem de matérias-primas; estilos cerâmicos.

Introduction

Within archaeological science prehistoric networks were traditionally considered under a typological framework where technological and mostly stylistically resemblance reflects the existence of a “cultural group or a people” behind similar cultural traits. For decades, European archaeologist tried to reconstruct and design on cartographic material “Cultures” which are ethnic networks that explain similarities and differences in the archaeological record. After Historical Culturalism break-down, Processualists within a new archaeological paradigm search for networks using hard evidence like raw materials reconstructing economic and technological pathways with strategic roles in system reproduction.

Today prehistoric networks are at the top of all agendas. Processualists’ descendents have stable isotopes, ancient

DNA and multiple archaeometric techniques to reconstruct small, medium and large distance networks establishing what kind of people and products have travelled episodically or systematic under these trades and exchange routes. Simultaneously, symbolic and ideological aspects of social networks have returned to post-modern archaeological debate in the form of identity issues and other social intangible factors that have shaped archaeological record like choices people made in the past whether to adopt and adapt or to reject material and immaterial things that were circulating throughout these networks.

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Under this debate, Early Neolithic cultural system in Far West Iberia could only be explained as the result of several networks throughout people from a demic perspective (e.g. Zilhão 2001, 2003; Diniz 2007) or cultural traits from a percolatory one (Rodríguez Alcalde *et al.* 1996; Soares 2003; Soares and Silva 2003) have reached after 5500 cal BC southern Portugal.

From these networks arrived domesticates like *Ovis aries* and *Bos Taurus* (Zilhão 1992), *Triticum aestivum/durum*, *Triticum dicoccum* and *Hordeum Vulgare* (López-Dóriga

(in press), technologies like pottery and polishing, and must probably people in spite of Neolithic DNA analyses seem rather inconclusive with no Near East genetic marker detected (Chandler *et al.* 2005). Being so Neolithization process was even in the Far West the result of a high voltage network capable of erase from cultural landscapes hunter-gatherers systems.

Searching for these networks consequences in Valada do Mato archaeological record is what is intended with this paper.

The Valada do Mato settlement (Évora, Portugal)

Valada do Mato is an open air Early Neolithic permanent settlement with a mixed agro-pastoralist hunter-gatherer economy, dated to the transition between the 6th and the 5th millennium cal BC, located in the Interior Southern Portugal (fig. 1) in a granite landscape.

Archaeological excavations, during eight field seasons, between 1995 and 2006, with an almost 300 hundred square metres already excavated, have documented different domestic structures like stone pavements, storage pits excavated in the bedrock and small stone walls (Diniz 2007).

These domestic structures like material culture items show an unusual occupation density attending to quantitative aspects but also to the presence of different typological artefacts groups reflecting the diversity of tasks performed at Valada do Mato settlement.

Unfortunately, due to local acid soils organic material is poorly preserved making absolute dating and quantitative economic reconstructions a very difficult job.

Valada do Mato occupation fits in a second Early Neolithic phase – by the end of the 6th millennium cal BC – according to the only absolute date we have so far (Diniz 2001) when agro-pastoralists groups started in Central and Southern Portugal a widespread movement of granite landscapes colonization register at S. Pedro de Canaferrim, Sintra (Simões 1999), Buraco da Moura e Pendo da Penha (Valera 2002-2003), Prazo (Monteiro-Rodrigues 2008), Defesa de Cima (Santos and Sobral 2008), Alter do Chão (Oliveira 2010), after a first neolithization episode where neolithic groups have chosen sandy areas like Cabranosa or Padrão in Algarve (Carvalho 2009), or limestone landscapes like Almonda's cave (Zilhão 1992) or Várzea do Lírio and Junqueira habitats in Estremadura (Jorge 1979) to settled down. This granite landscape settlement model that according to Portugal's geological map means to move away from the coast will needed specific networks to ensure cultural system reproduction in this particular geological environment.

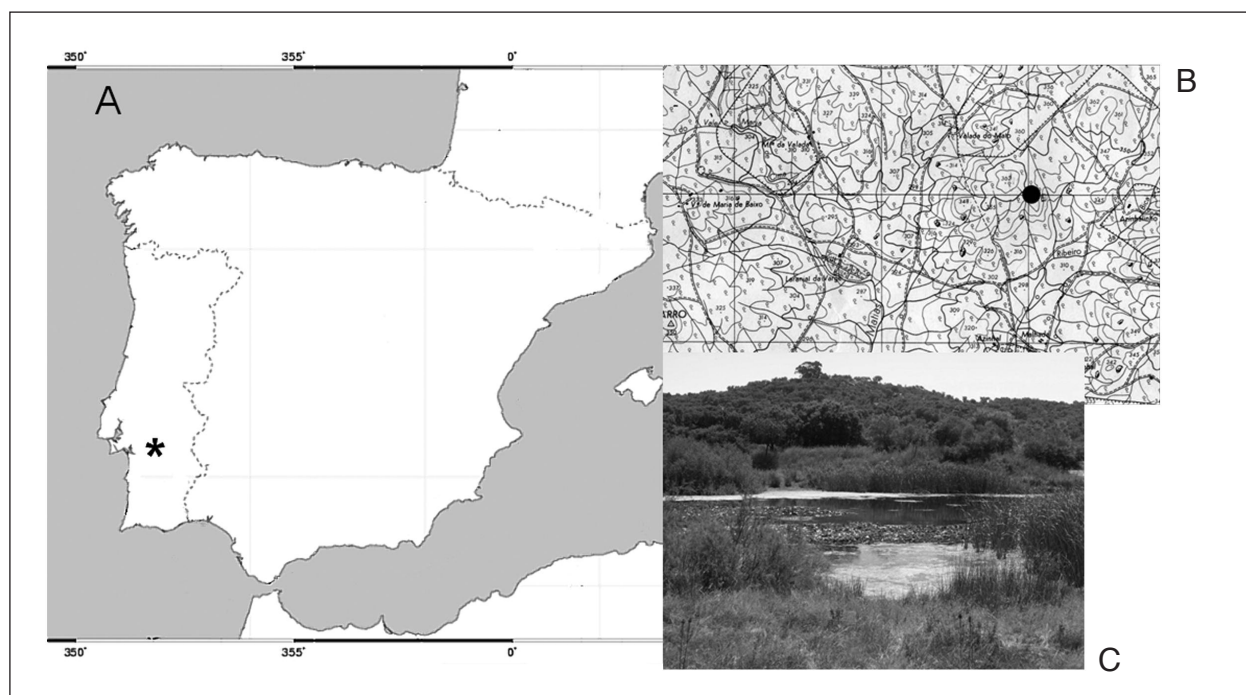


FIGURE 1. A - Valada do Mato settlement location at Iberian Peninsula map, B – Valada do Mato at an excerpt of Portugal Military Map, n.º 448, 1:25 000, from the Military Cartographic Services, C - Valada do Mato hilltop Early Neolithic settlement view from East.

Valada do Mato Networks

If we start looking for Valada do Mato networks where raw materials, products, ideas and people have circulated we could start with an old fashion analytical model like site catchment analysis searching for hard evidence like raw materials since organic samples are very rare in archaeological record. Attending to archaeological record Valada do Mato group has used a large set of different raw materials with diverse origins using at the same time different scales networks.

Valada do Mato Small Scale Networks

Available at a short distance from Valada do Mato within a 5km diameter circle it is possible to find almost all raw materials needed on a daily basis. Polished stone industries which include small axes (fig. 2-B) and adzes, polishers and ornaments, depend only on local raw material. Amphibolites outcrops could be found at about 2.5km NW of the settlement and even closer could Valada do Mato group obtain granite and quartz used in grinding, polishing and knapping industries that were available on the site itself being part of geological background.

Clays also came from the immediate surroundings of Valada do Mato settlement. After petrographic analysis us-

ing a 15x optical instrument became established that clays used at the site were explored from several deposits formed in different geological conditions like granites, amphibolitic and gabbrodioritic deposits formed over rocks, all existent in a short distance from Valada do Mato (fig. 2).

Valada do Mato Medium-Scale Networks

Not so clear are quartzite pebbles sources. For the moment, the nearest gravel deposits recognized in the region connected with Guadiana, Sado or Tejo rivers are at least 40km away from Valada do Mato, which seems a long distance to transport heavy materials like quartzite pebbles. This should be reason why quartzite pebbles used in Valada do Mato as termoclasts, flakes cores and anvils were relatively rare material.

On the opposite side, flint the main raw material for knapped stone industry at Valada do Mato reaching about 70% of total flaked material within a universe of 15000 items is a non-regional raw material. Part of the flint could come from gravel deposits where quartzite was also gatherer but from cortex observation at least some cores came from primary geological sources. The nearest flint sources are at Portuguese Estremadura about 100km

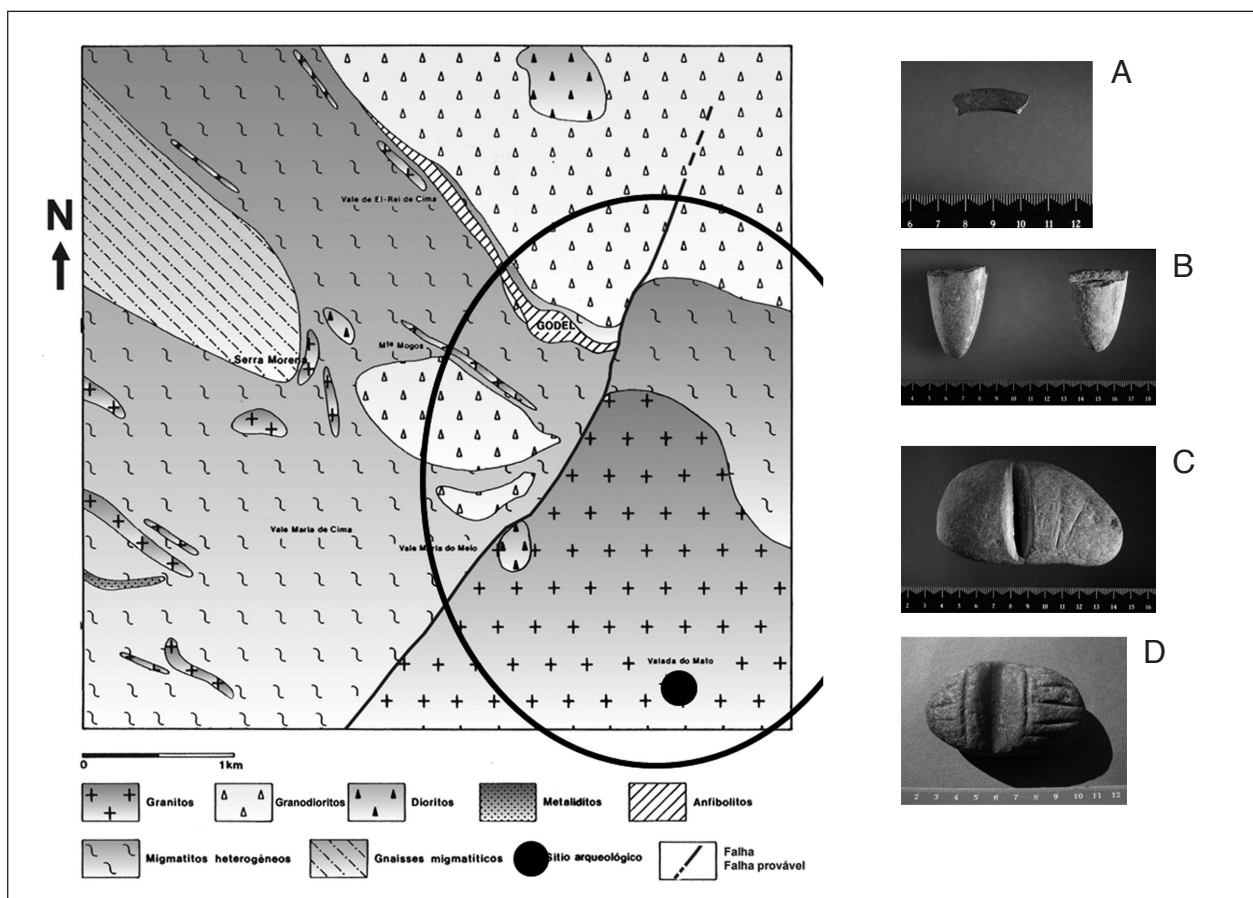


FIGURE 2. Detailed geological map from Valada do Mato immediate surroundings (after Barros and Carvalhosa in Cardoso *et al.* 2000) and polished stone tools all made with local amphibolite: A - bracelet, B - axes or adzes, C - polisher with central depression, D - small decorated polisher.

NW from Valada do Mato and can be reached easily through a smooth landscape with no major relief's. In spite of source distance knapped very high quality flint was a cultural option in Early Neolithic settlement of Valada do Mato since poor quality chert was available at c. 15km away.

Attending to Valada do Mato archaeological record it seems that here flint like in Magdalenian period (Zilhão 1997) have travelled in small and pre-tested cores and primary reduction was made nearby geological sources which explain why cortex material is rare in Valada do Mato contrasting with other operational sequence abundant remains, like exhausted cores and waste material.

Valado do Mato Small and Medium Scale Networks

If we try to reconstruct Valada do Mato networks attending to raw materials only we could design three major catchments' areas with very different diameters. In the first one with a typical 5km radius, amphibolite, quartz, granite and different clays were immediately available. A small part of knapped industry, made out of quartz, polished stone artefacts and pottery depend on local raw materials which would have been directly obtained by Valada do Mato group.

A second catchments' area could be traced to gatherer quartzite and probably some flint cores with rounded alluvial cortex. Guadiana and Sado rivers gravel deposits where this material could have been found are the nearest to Valada do Mato, and exploiting these 40km distance sources could be considered within a regional strategy of landscape uses.

When it came to high quality flint a different scenario emerges. Here we need a third catchments' area with no less than 100 km radius to reach the nearest sources in Portuguese Estremadura. Due to source distance all lithic reduction strategy seems to be adapted to this circumstance where pre-tested cores have to travel long distances.

So it seems that beside an intensive use of local and regional raw materials from Valada do Mato some networks are clearly established to overpass natural environment bias. The extensive use of high quality flint that could come only from medium distances, in spite of being local and regionally available other siliceous materials like chert, rhyolite and quartz, make no doubt on whether this was a cultural choice made by Neolithic knappers.

Even after establishing that Valada do Mato archaeological record is the result of different landscape exploitation strategies from this data it is not possible to ensure how these networks have in fact worked out. Within these different catchments areas we can assume that direct access is the most suitable social mechanism to reach raw material up to 40-50km away, but for high quality flint some kind of regular trade/exchange network could have been used linking since Early Neolithic period two complementary areas in lithic raw materials – Central Alentejo where amphibolite is abundant and Portuguese Estremadura a very rich flint area.

From an archaeometric point of view, most raw materials used in Valada do Mato come from an area with no more than 5km diameter, representing small scale networks with quartzite and flint being important exceptions enlarging procurement territories until 100km away.

For that reason if an area of about 100km radius is enough to find all raw materials used in Valada do Mato we could describe this Early Neolithic second stage mainly as an "internal affair" where long distance contacts have not played any particular role and agro-pastoralist groups seem to have developed a progressive regionalization from wider cultural backgrounds connected with neolithization process first stage.

But if we change perspectives looking on Valada do Mato material record not for raw materials but for role models, looking for mental archetypes which individual artefacts reproduce we will need a totally different map scale where both western Mediterranean shorelines appear.

Enlarging Networks - from Raw Materials to "Role Models"

Leaving raw materials and searching for role models we will use artefacts which have an explicit cultural meaning – the so called fossil directors – that could bring clues about cultural-strategic networks like polished stone tools and pottery artefacts.

Within this analysis knapped industries will not be discussed since many artefacts prototypes reflect a hunter-gatherer legacy raising a different set of questions engaged with diachronic cultural networks not considered here.

Polished Stone Tools Ornaments - bracelet

The only bracelet recovered so far in Valada do Mato (fig. 2-A), a fragment of a polish stone ornament with

an estimated 6.8cm diameter was made in local amphibolite corresponding to a well established Early Neolithic Western Mediterranean prototype, with parallels in Valencian Country Early Neolithic sites like Cova de l'Or (Martí Oliver and Juan Cabanilles 1987). Early Neolithic stone bracelets a very significant cultural diagnosis artefacts are rare in Portugal archaeological record with bracelet fragments recorded only at Salema (Silva and Soares 1981: 97) and Xarez 4 (Gonçalves 2002:175) habitats.

Stone Polishers

Small stone polishers with a central channelled depression well-known in Eastern and Southern Mediterranean Neolithic contexts are not so common in Iberian Early Ne-

olithic record. These portable polishers are usually connected with arrows polishing. Three pieces were already recovered in Valada do Mato (fig. 2-C) (Diniz and Vieira 2007), one of them decorated with incised lines (fig. 2-D) resembling the ones from North African surface sites. Although all Valada do Mato stone polishers were made with local amphibolites artefacts typological analysis pointed to shared role models and to networks covering both sides of western Mediterranean basin. In contrast with Valada do Mato the scarcity of these stone polishers in other Early Neolithic Southern Portugal contexts may be related with this habitat permanent occupation.

Pottery: vessel decoration and other pottery artefacts

Moving from stones tools to pottery we find more Mediterranean connections in Valada do Mato archaeological record. More than shapes or sizes vessels decoration constitutes in Early Neolithic cultural systems major diagnostic items due to a combination of techniques and motifs making a more or less complex grammar sometimes having a clear spacious-temporal dimension. An important issue here is try to define when a decoration motif/technique is indeed a cultural trait repeated by potters who share a common even if unconscious reference, like a habitus in Bordieu sense (1994), or when similarities in decoration patterns are no more than a simple coincidence without any social connections behind it. Systematic quantified analysis on different decorations patterns weight will be needed to resolve this question.

Other issue here seems to be a biased understanding of archaeological record where some imprinting material, techniques or motifs are considered cultural identity traits and others are not. Why *Cerastoderma* prints are in archaeological literature a meaningful cultural feature relating to the same historical process groups that stand apart from thousand kilometres and sometimes for more than a thousand years and other also recurrent decorations grammars - impressed, incised or channelled - are so under evaluate tells us more about science politics than about the Past itself.

At Valada do Mato pottery assemblage attending to all sherds that were petrographic analyzed has been made using only local clays but like other polished materials raw materials and role models do not share provenience attributes.

Cardial Ware

Cardial pottery is rare in Valada do Mato. The use of cockle shell is attested at no more than 2% of decorated sherds designing mostly simple patterns with series of perpendicular or parallel lines below the rim. In Valada do Mato pottery decoration choices Cardial style is clearly a marginal one although its presence being crucial to put Atlantic Southern Portugal in a Mediterranean Early Neolithic map.

Punto y Raya and *Sillons d'Impressions*

Other impressed decorations like *punto y raya* and *sillons d'impressions* are present in Valada do Mato pottery assemblage, but they represent a statistical minority with 2.5% compare to other patterns/techniques that dominate the assemblage. *Punto y raya* which exact chronology is now under debate (Alday Ruiz *et al.* 2008) is sometimes describes as an Interior Neolithic decoration pattern but its really chronological origin, geographical widespread and cultural provenance are indeed not so clear. Within Western Iberian groups *punto y raya* is document but never dominant among other Early Neolithic decorative systems. Even if *punto y raya* is present in Almonda's cave, a first generation Early Neolithic site (Zilhão 1992) this technique was more frequent employed by the end of the 6th millennium BC according to Laranjal do Cabeço das Pias (Carvalho and Zilhão 1994), Pedreira das Salemas and Correio-Mor (Cardoso *et al.* 1996), Casa da Moura e Bocas rockshelter (Carreira 1994) Valada do Mato (Diniz 2007: 259) and Samouqueira II (Soares 1997: 599) data.

At least one Valada do Mato high quality vessel could be assign to *sillons d'impressions* ware. Even if *sillons d'impressions* were at Western Mediterranean Northern shore a major pre-cardial decoration technique its presence at Valado do Mato reflects that *punto y raya* and *sillons d'impressions* have travelled a long way and for a long time during Western Mediterranean Early Neolithic.

Channelled Ware

Channelled ware is at Valada do Mato the second major decoration group reaching 25% after pottery with an impressed band below the rim. Although not so much discussed as a cultural marker like cardial pottery this group exhibit an important degree of homogeneity on both Western Mediterranean and Southern Atlantic Europe coastlines as already noted by some authors (Soares and Silva 1979: 24). Some complex motifs combining plastic and channelled decoration where a mamelon below the rim is the starting point for three or four channelled lines parallels to vessel's mouth seems rather elaborate to be a simple coincidence (fig. 3), instead it is more most likely that during Early Neolithic period Western Iberia and Western Maghreb could have been part of a common network where pottery decorative grammars and some knapped industries aspects like geometrics typology has been shared.

Although cardial groups seems earlier in Western Mediterranean Neolithic cultural sequence than channelled ware groups it is not clear wither if these two pottery traditions are sequential or simultaneous attending to Oran area data (Daugas *et al.* 2008).

Symbolic Pottery

Valada do Mato pottery assemblage is an Early Neolithic Western Mediterranean product here different cultural stimulus were operating. But if mostly pottery decorations

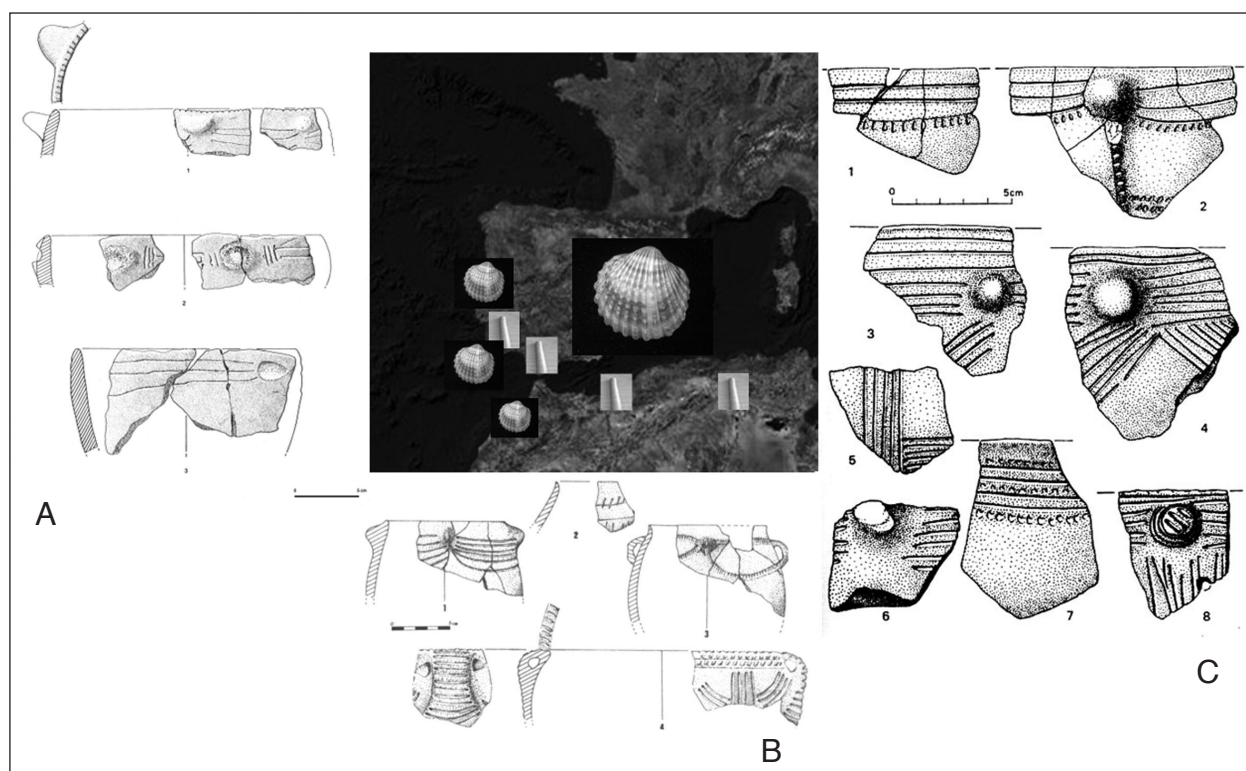


FIGURE 3. Western Mediterranean main pottery ware groups: - cardial groups; - channeled ware groups. A - channeled pottery from Valada do Mato, B - channeled pottery from Gorham's cave, Gibraltar (after Garcia *et al.* 1999), C - Oran region and Andalucía channelled pottery (after Champs 1998: 51).

could be a habitus some other ceramic artefacts demands a different level of self consciences in their making and using process. Pottery vessels like the one in figure 4-A, a small sherd with a prayer's legs impressed establish once again clear connections with Mediterranean Iberia area in particular with Alicante region where both on pottery decorations and rock art motifs this anthropomorphic figurine is frequent (Marti Oliver and Hernández Perez 1988).

Anthropomorphic Figurine

Connecting Valada do Mato Early Neolithic settlement with Eastern and Central Mediterranean basin is also made by a small anthropomorphic genderless clay figurine (fig. 4-B), (Diniz 2008), that puts Western Iberia in Mediterranean symbolic map. Like other clay artefacts

from Valada do Mato this figurine was made using local raw material even if it is representing an interregional symbolic code.

This 5.5cm figurine tall, dressed with a ritual costume that the use of powdered bone (Odriozola 2008) inside impressed motives make more visible was like most of its eastern partners found in a no significant archaeological context within post-depositional levels (Bailey 2005).

This lonely and headless anthropomorphic figurine, so far the only one known in Iberian Early Neolithic contexts, make clear that trough out Early Neolithic networks not only peoples, techniques and domesticates were travelled but ideas and symbols circulated along side making neolithization process much more than a technological transfer issue.

Early Neolithic Valada do Mato Networks: on the importance of being part of a group

It is not clear how these ideas and archetypes have in fact travelled along Mediterranean coasts and how they were integrated, rejected or transformed by both indigenous and foreigner groups in particular contexts.

From Western Iberian archaeological record it seems that some groups participate in small, medium and long distance networks in a more effective way then others over passing any kind of cultural isolationism that a particular geographic position could define.

In fact, Valada do Mato archaeological record reveal that

geographic distance does not always mean cultural distance. So many so different and sometimes not utilitarian Mediterranean items being present in this settlement integrate it in a real Mediterranean cultural entity in spite of its Atlantic geographic location integrating Southern Portugal in a Mediterranean cultural and geographic nature like Portuguese geographers have already recognize (Ribeiro 1991).

Valada do Mato in fact contradicts what has been hypothesized about Epicardial groups - to use here a con-

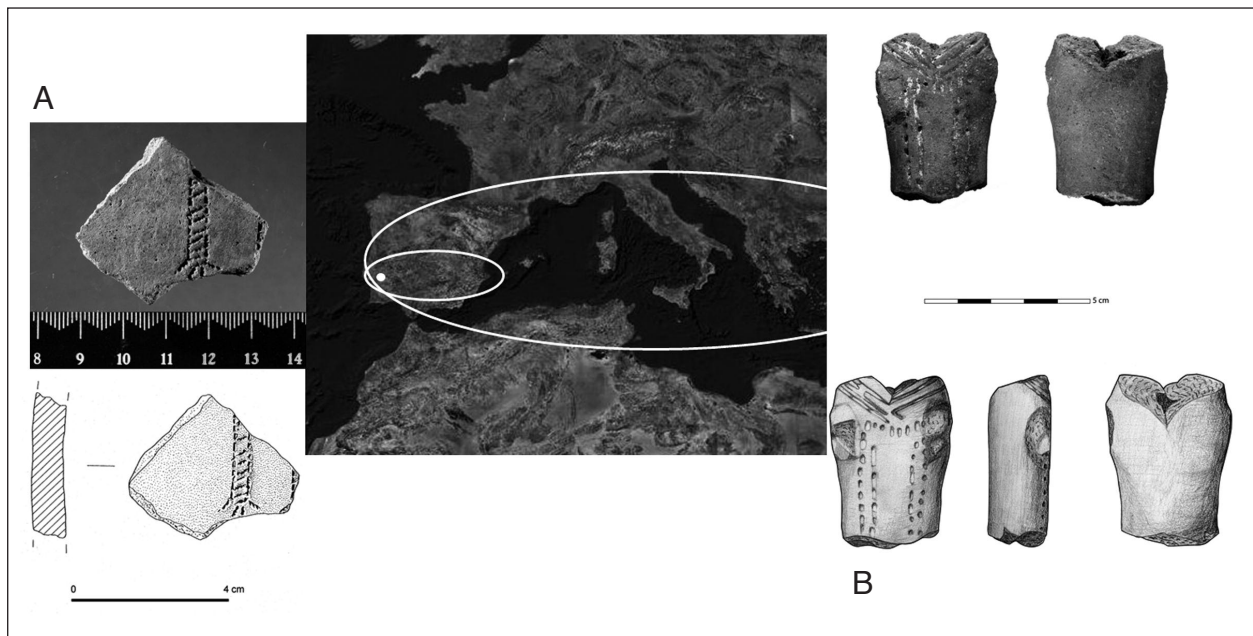


FIGURE 4. Mediterranean symbolic catchments areas from Valada do Mato: A – pottery fragment with prayer's legs impressed, B – Valada do Mato anthropomorphic clay figurine.

ventional terminology - where an important regionalization is expected in material cultural mainly pottery decoration patterns. Even if some decorative grammars do not look like homogeneous as cardial it can not be argued that only the use of cockleshell is enough to establish a cultural common background to different groups in sometimes distant regions. By the end of the 6th millennium BC, *punto y raya*, *sillons d'impressions* and above all channeled wares show a high degree of similarities that could easily be explained as the results of a common network.

In Western Iberia Early Neolithic groups like the one settled in Valada do Mato by the end of 6th millennium BC

participated in a much wider cultural landscape with networks over which not only or mostly not raw materials but techniques and symbolic principles have circulated. Mediterranean social networks were during neolithization process and stayed after it wide open combining local resources and foreigner ideas.

By the end of 5th millennium BC Neolithic groups in Western Iberia have changed their geographical choices being attached to other cultural environments connected with Atlantic Europe and emergent Megalithism contexts. Like in Early Neolithic period throughout these networks both material and immaterial things have travelled designing multiscale social landscapes.

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